

METHOD FOR MAKING A MOLDED POLYMERIC ARTICLE

ABSTRACT OF THE DISCLOSURE

This disclosure relates to a method for making a polymeric article mold, a method for making a polymeric article with that mold, and improved surface topography features for a polymeric article. A prototype article is formed and then coated with a thin conductive layer. The coated prototype article is then electroformed until nickel plated to a sufficient depth to define a nickel plating tool. After the prototype article has been removed from the mold face of the nickel tool, the tool can be used as a mold for forming finished polymeric articles which replicate the original prototype article. The use of fine topography features such as a dense upstanding stem array on the surface of the prototype article facilitates accurate and complete electroforming by increased surface area presentation. The disclosure also presents improvements to microreplicated surface structures such as stem arrays. The improvements include the formation on a stem array having separate zones of stems of differing heights, and the formation of directional microreplicated features (e.g., stems) which are oriented and shaped to promote or restrict frictional interaction in one or more particular directions.